S/M.

| Notice of Allowability | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/749,410 | NERIISHI ET AL. | |
| | Examiner | Art Unit | |
| | Carla Myers | 1634 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.

2. ☒ The allowed claim(s) is/are *1-3 and 8*.

3. ☒ The drawings filed on *28 December 2000* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

## EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Susan Dadio on April 14, 2004.

The application has been amended as follows:

1. A process for detecting a complementary DNA fragment which comprises the steps of:

bringing a liquid phase comprising single-stranded sample DNA fragments having a radioactive label [in a liquid phase] into contact with a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from the group consisting of DNA molecules, DNA fragments, synthesized oligonucleotides, synthesized polynucleotides, and PNA (peptide nucleic acid) are fixed under such conditions that a group of the probe compounds fixed in one area differs from a group of the probe compounds fixed in another area, so that DNA fragments complementary to a group of the probe compounds are fixed [by hybridization to the area in which the last- mentioned group is fixed] to an area of the micro-array by hybridization of complementary DNA fragments to the probe compounds;

removing unfixed sample DNA fragments from the DNA micro-array;

keeping the DNA micro-array in contact with a radiation image storage panel containing a stimulable phosphor via a spacer sheet [having openings in areas corresponding to the areas on which groups of the probe compounds are fixed,] intervening between the DNA micro-array and the radiation image storage panel, said spacer sheet being in direct contact with the micro-array and having openings aligned with the areas of the micro-array to which the probe compounds are fixed, so that the radiation image storage panel can absorb and store radiation energy [of the radioactive label coming from the fixed] transmitted by the radioactive label of the fixed complementary DNA fragments through the openings in said spacer sheet;

irradiating the radiation image storage panel with a stimulating light, so that the image storage panel releases a stimulated emission from the area in which the radiation energy is stored;

detecting the stimulated emission photoelectrically to obtain a series of electric signals; and

processing the electric signals to locate the area in which the complementary DNA fragments are fixed.

8. A process for detecting a complementary DNA fragment which comprises the steps of:

bringing a liquid phase comprising single-stranded sample DNA fragments having a radioactive label [in a liquid phase] into contact with a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from the group consisting of DNA molecules, DNA fragments, synthesized

oligonucleotides, synthesized polynucleotides, and PNA (peptide nucleic acid), are fixed under such conditions that a group of the probe compounds fixed in one area differs from a group of the probe compounds fixed in another area, so that DNA fragments complementary to a group of the probe compounds are fixed [by hybridization to the area in which the last- mentioned group is fixed] to an area of the micro-array by hybridization of complementary DNA fragments to the probe compounds;

removing unfixed sample DNA fragments from the DNA micro-array;

keeping the DNA micro-array in contact with a radiation image storage panel containing a stimulable phosphor via a spacer sheet [having openings in areas corresponding to the areas on which groups of the probe compounds are fixed,] intervening between the DNA micro-array and the radiation image storage panel, said spacer sheet being in direct contact with the micro-array and having openings aligned with the areas of the micro-array to which the probe compounds are fixed, so that the radiation image storage panel can absorb and store radiation energy [of the radioactive label coming from the fixed] transmitted by the radioactive label of the fixed complementary DNA fragments through the openings in said spacer sheet;

irradiating the radiation image storage panel with a stimulating light, so that the image storage panel releases a stimulated emission from the area in which the radiation energy is stored;

detecting the stimulated emission photoelectrically to obtain a series of electric signals; and

processing the electric signals to locate the area in which the complementary DNA fragments are fixed,

wherein said spacer sheet has a thickness in the range of 10 to 300 μm and is made of a non radiation-transmitting material [is] selected from the group consisting of aluminum, brass, stainless steel, polyethylene terephthalate and polyethylene naphthalate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carla Myers whose telephone number is (571) 272-0747. The examiner can normally be reached on Monday-Thursday from 6:30 AM-5:00 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (571)-272-0782.

Papers related to this application may be faxed to Group 1634 via the PTO Fax Center using the fax number (703)-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Carla Myers
April 19, 2004

CARLA J. MYERS
PRIMARY EXAMINER